

# COAL MINING

AUGUST, 1951

"The Picture-Book of the Industry"

VOLUME 28, No. 8

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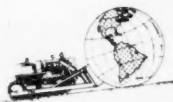
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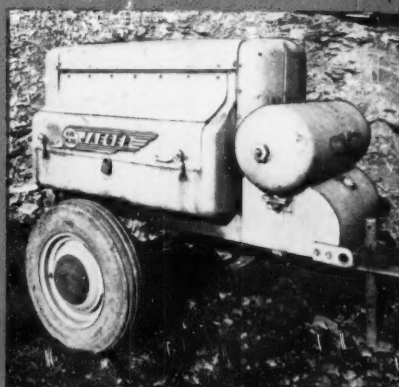
Paul Garbart, Uniontown, uses Allis-Chalmers HD-19s throughout his stripping operations.



Toronto Coal Company, Knoxville, Ohio . . . Lima type 2400.

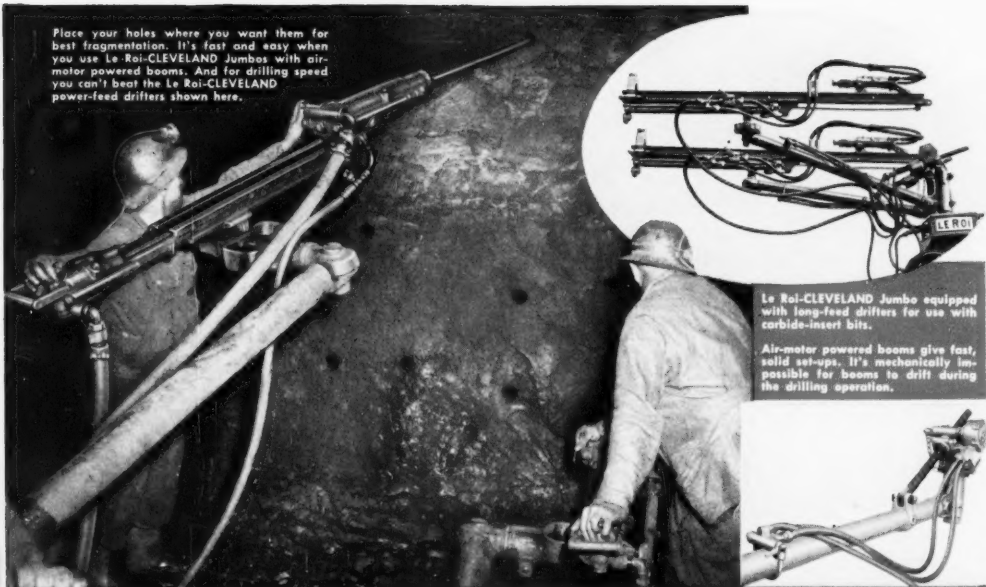


Jaeger Pumps are used to dewater pits on strip jobs everywhere.



Swaney & Meats, Uniontown, does 4 days work in 3 with this Jaeger model 125 "new standard" compressor.

Place your holes where you want them for best fragmentation. It's fast and easy when you use Le Roi-CLEVELAND Jumbos with air-motor powered booms. And for drilling speed you can't beat the Le Roi-CLEVELAND power-feed drifters shown here.



Le Roi-CLEVELAND Jumbo equipped with long-feed drifters for use with carbide-insert bits.

Air-motor powered booms give fast, solid set-ups. It's mechanically impossible for booms to drift during the drilling operation.

## *Drilling-Cycle Time Reduced, Footage per Shift Increased*

**... when you use Le Roi-CLEVELAND Jumbos  
and power-feed drifters in your rock headings**

**T**HERE are three things you have to do if you want to save time in your drilling cycle and increase your footage — reduce set-up time, drill out the round faster, and shorten tear-down time.

You know this and so do we. That's why we designed the Le Roi-CLEVELAND jumbo the way it is. And that's also why our drifters drill so fast.

Let's see what you get when you use Le Roi-CLEVELAND:

- ★ The most flexible jumbo available. Air-motor powered booms let you space your holes quickly and easily for most efficient fragmentation.
- ★ Rigid, non-slip set-up feature keeps drifters in line, prevents steel binding, saves wear and tear

on chucks, results in higher average drilling speeds.

- ★ Strong rotation, plus snappy yet powerful force of blow of Le Roi-CLEVELAND drifters gives you unexcelled drilling speed. This drilling speed coupled with the fast, positive feeding action of our power feed gives you the right pressure for fastest drilling and reduces drill-steel changing time.

You add all these advantages together when you use Le Roi-CLEVELAND jumbos and power-feed drifters. The outcome is faster drilling cycles, more footage per shift—so why not standardize on these cost-cutting honeys. Write for complete information.



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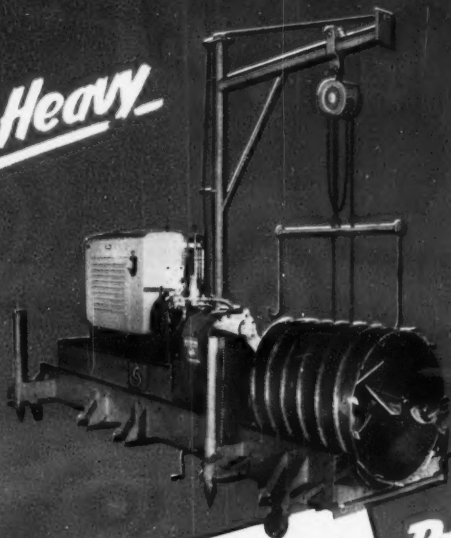
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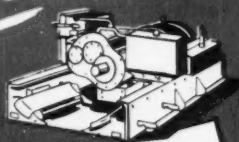
RD-42

*Heavy*



• McCarthy Coal Recovery Drill shown with 36-inch auger, Lump Drill Head, Auger Retriever and Auger Hoist.

*Rugged*



*Powerful*

• Compactly designed McCarthy Underground Coal Recovery Drill equipped with permissible electric motor.

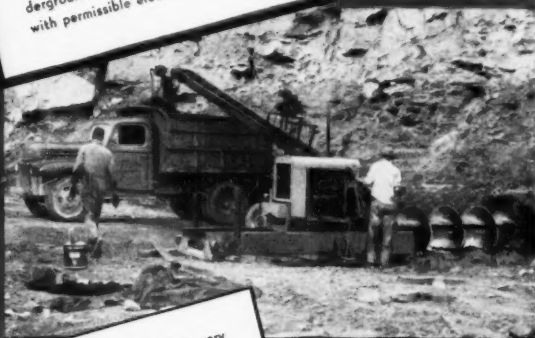
• Here's a combination drill and screw conveyor unit that pulls continuous streams of clean coal right out from the heart of the vein without removing overburden!

McCarthy Coal Recovery Drills are built for both strip and deep mine operations. They work easily to horizontal depths 60 feet deep or more to deliver an average daily output amounting from 15 to 50 tons per man per shift.

McCarthy Coal Recovery Drills are ruggedly built, equipped with finger-tip hydraulic controls and gasoline, electric or diesel power units.

Special gear ratios provide for a smooth, steady bite with six or twelve-foot interlocking Salem auger sections of 12, 16, 20, 24, 30, 36, 42 and 48-inch diameters.

Write today for the full story on the revolutionary new McCarthy Coal Recovery Drill . . . a tool that day in and day out, delivers 15 to 50 tons of clean coal per man per shift!



• Use McCarthy Coal Recovery Drills and you can mine, load and ship coal all in one continuous operation without considering cost of removing overburden!

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Published monthly by Modern Mining Publishing Company. Publication Office—Advance Printing & Litho Co., Erie, Pa. Editorial and Executive Offices—5403 Clairton Blvd., Pittsburgh 27, Pa., P. F. JASIK, Publisher & Editor. Price: In the United States, \$2.00 per year; all other countries, \$5.00. Single copy, 50 cents. Entered as second-class matter at the Post Office at Pittsburgh, Pennsylvania, under the act of March 3, 1879. Application for reentry applied for at the Post Office at Erie, Pennsylvania.

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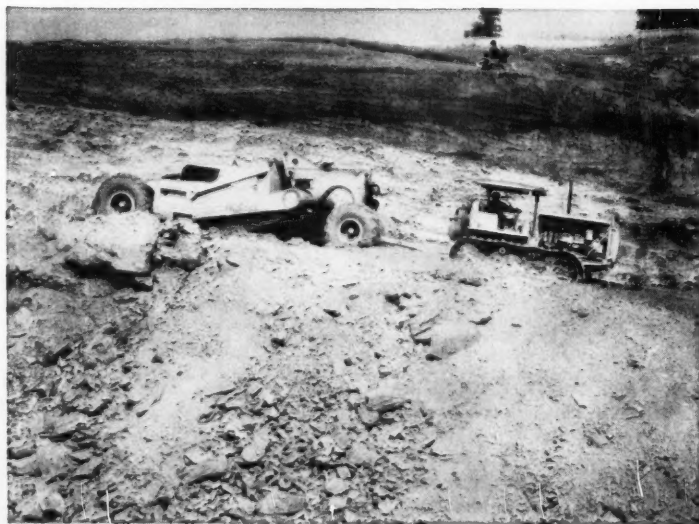
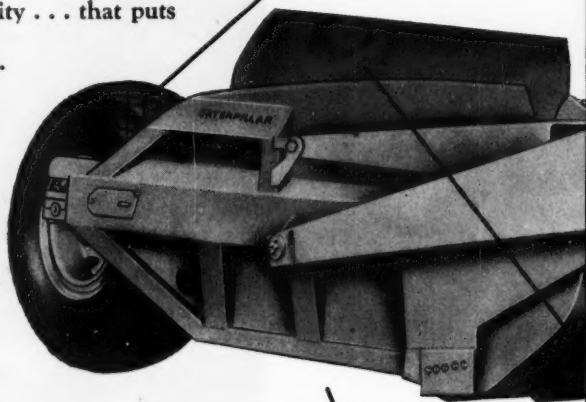
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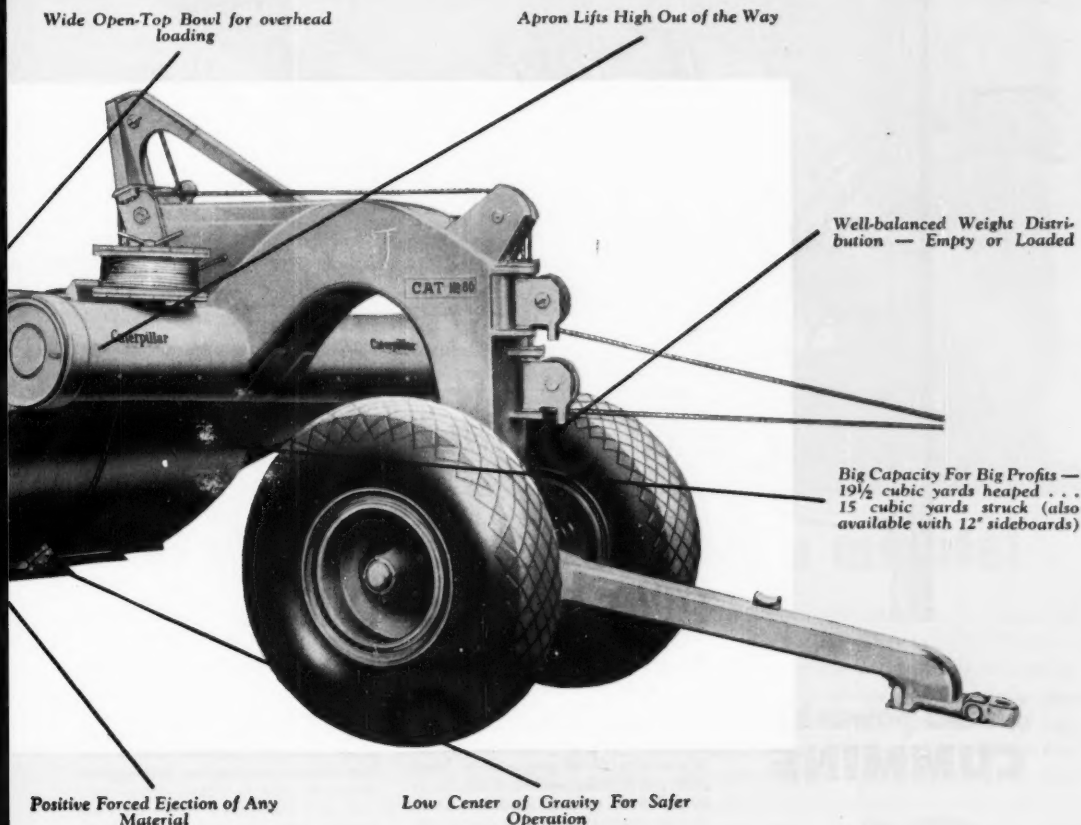
High Clearance To Eliminate  
Hang-up

Loading down-hill for bigger production, a "Caterpillar" D8 Tractor and matching No. 80 Scraper takes a bite of overburden from a coal seam near Kittanning, Pa. The Widnoon Co., owner of the team, picked "Caterpillar" for a right fit for their needs.



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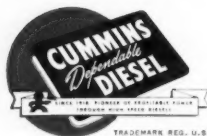


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That's *twice* as much coal a day as all the British mines turn out.

That's *three* times as much coal a day as slave labor gets out of the government-owned mines of Communist Russia.

That's producing coal at a rate-per-man, 4 to 24 times that in *any* country in Europe or Asia.

How can America's coal companies do it?

The productivity of American mines has climbed steadily with the ever-increasing use of machinery. Today, 98% of all American coal is mechanically mined—

and about 75% is mechanically loaded. Today, output per man is more than 30% greater than in 1939! *This is one of the greatest efficiency increases in American industry.*

Not only do America's privately managed coal companies produce *more* coal—they produce *better* coal, too. Giant preparation plants now turn out a coal that, when used under an up-to-date boiler, yields *three times* the energy produced only a few years ago.

Now—when the job of rearming calls for more and better coal—the nation's privately managed coal companies are operating at the highest level of efficiency ever. *America will get all the coal it needs!*

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A DEPARTMENT OF NATIONAL COAL ASSOCIATION

WASHINGTON, D. C.

FOR NATIONAL DEFENSE  FOR PEACETIME PROGRESS

# YOU CAN COUNT ON COAL!

# COAL MINING

Vol. XXVIII AUGUST, 1951 No. 8

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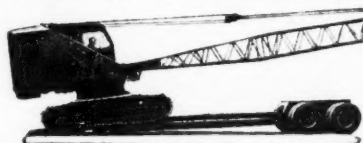
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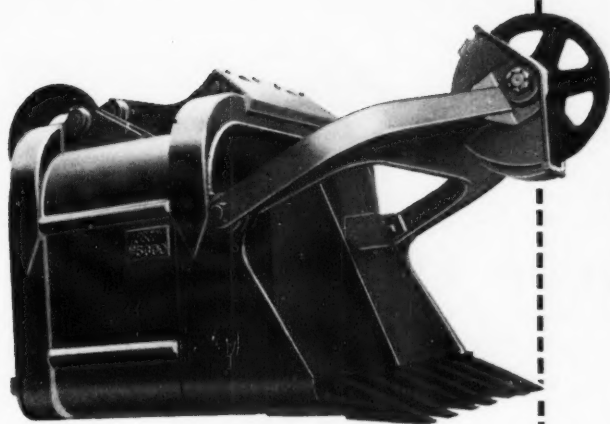
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For general purpose work.  $\frac{3}{8}$  to  $6\frac{1}{2}$  yards.

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For extremely severe service.  $\frac{3}{8}$  to 5 yards.

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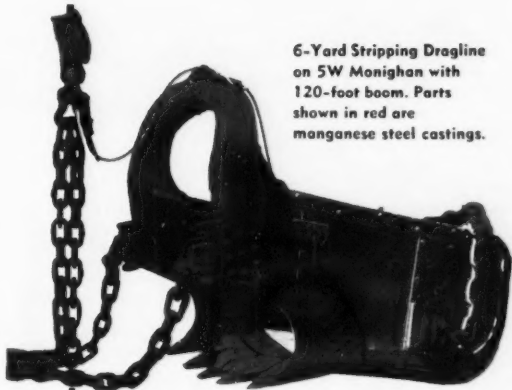
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Combination type Penn Body for Coal—Earth—Stone  
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**for Coal and  
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Over the years Penn Dump Bodies have earned an enviable reputation for long body life with a minimum of maintenance cost. Ruggedly constructed of steel and adequately reinforced, Penn Bodies are built to withstand the wear and tear of loading, hauling and dumping.

Body shown here is designed for all-purpose hauling. A time and money saver, it can be used for "dozing"—eliminating an additional piece of equipment. Boasting a capacity of 10 cu. yds. of

earth, stone or boney it can be quickly converted, by means of steel extension sides, to handle 15 cu. yds. of coal.

Penn Telescopic Hoists are tough, durable, efficient. Simple in design—smooth and powerful in operation, Penn Hoists have no small pistons or working parts to wear, bend or twist under heavy loads—lifting power is applied directly to the load without the use of cams, levers, arms or rollers.

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## DO YOU KNOW?

A cement treatment that checks the growth of bacteria and fungus on the floors and walls of dairies, school gymnasiums, locker and shower rooms, restaurant kitchens and chemical plants is reported to be satisfactory after nine years of testing.

Scrubbed and washed with strong soaps, the anti-bacterial qualities of the cement actually increased. This is because the bacteria inhibiting agent is less soluble in water than cement itself.

However, the anti-bacterial cement has no effect on normal human skin. A pat of the cement was taped to a man's arm for 52 hours without results of any kind. The skins of guinea pigs showed no reaction after being rubbed with the cement three times a day for two weeks.

\* \* \*

More than 60,000 engineers will be needed by government and industry, even after this year's June graduates have all started working.

A just-completed survey of over 378 companies and government agencies showed this shortage. Carvey H. Brown, chairman of the Engineers Joint Council told members of the American Society for Engineering Education here.

He blamed the increased demand for engineers on mobilization needs and on the extreme advances in technology in the last several years. Engineering graduates will not be so numerous in the coming years, he predicted. Although this year's classes furnished 38,000, only about 26,000 are expected next year, with the number falling off to about 12,000 in 1954.

\* \* \*

Live windpipe banks may be added to nerve, artery and bone banks which doctors of the future can draw on when a patient needs a replacement for that part of his body.

Experiments pointing in that direction were reported to the American College of Surgeons here by two groups of investigators, Drs. Orland Davies, J. Malcolm Edmiston and H. J. McCorkle of the University of California School of Medicine, and Dr. Victor Richards and John E. Connolly of Stanford University School of Medicine.

Heretofore tubes of plastic metal and fibrous tissue have been used in attempts to replace sections of the windpipe, or trachea, when this had to be removed to eradicate disease.

Pieces of trachea, some fresh and some stored in a trachea bank have been used successfully as grafts to bridge gaps in dogs' tracheas, both groups of surgical investigations reported.

\* \* \*

Flickering lights caused by electric welding machines can be eliminated thru the use of information contained in a bulletin soon to be issued, the American Institute of Electrical Engineers.

Prof. M. Stanley Helm, Prof. Max A. Fawcett and Marvin Fisher, Jr., of the University of Illinois, explained that they had computed tables showing the size of wires and the amount of current needed to prevent the flicker. Previously power companies have had to guess at these requirements. Electric motor loads as far as five miles away have important bearing on three-phase power lines, they said.

## Here and There in the Coal Industry

• The Virginia Coal Operators Association of Norton, Virginia, held its 32nd Annual Meeting on Friday, July 6. The Board of Directors re-elected for the ensuing year are: A. R. Mathews, R. S. Graham, H. W. Meador, J. P. Shockey, E. P. Litton, J. P. Horne, C. B. Jackson, C. F. Connelly and George H. Esser. The Board then elected the following officers who will serve during the current year: George H. Esser, President, Secretary and Treasurer; H. W. Meador, Vice President, and E. H. Robinson, Assistant Secretary and Assistant Treasurer. E. P. Humphrey was re-elected National Councillor, U. S. Chamber of Commerce, representing the Association.

• Herbert E. Jones, Jr., has been appointed Vice-President in Charge of Operations of the Amherst Coal Company, Logan County Coal Corporation and the Hatfield-Campbell Creek Coal Company, with offices at Lundals, West Virginia, according to an announcement dated July 9 from the President of those companies, Herbert E. Jones.

• The 14th Joint Fuels Conference sponsored by the Coal Division, American Institute of Mining and Metallurgical Engineers and the Fuels Division, American Society of Mechanical Engineers will be held at the Roanoke Hotel, Roanoke, Virginia, on October 11 and 12.

• Mr. Edmond A. Watters, Jr., has become associated with the Mine-Engineering firm of Geo. S. Baton and Company of Pittsburgh, Pa.

Mr. Watters is a mining-engineering graduate of Penn State University and has received his Masters Degree in Engineering at Columbia University. He was formerly associated with the L. W. Hicks Interests and the Leechburg Coal Company. His headquarters will be at the Company's office in Pittsburgh.

• Announcement is being made of the election of John P. Courtright to Executive Vice-President of The Marion Power Shovel Company, Marion, Ohio.

He was named recently at a meeting of the Board of Directors. The appointment is effective immediately.

For several years Courtright served as MARION'S vice-presi-

dent in charge of sales and service and continues in this capacity in his new position. He has been associated with the company since 1927, first working out of the Chicago sales office where he was later made district manager.

He came to the general offices in Marion as sales manager in 1937 and was made vice-president in charge of sales in 1941.

• It is as yet an unsolved mystery whether cosmic rays which continually bombard the earth from somewhere in outer space, smashing into our atmosphere, receive their tremendous energy within our planetary system or in the region of the Milky Way or whether they originate in between the many galaxies which fill the universe.

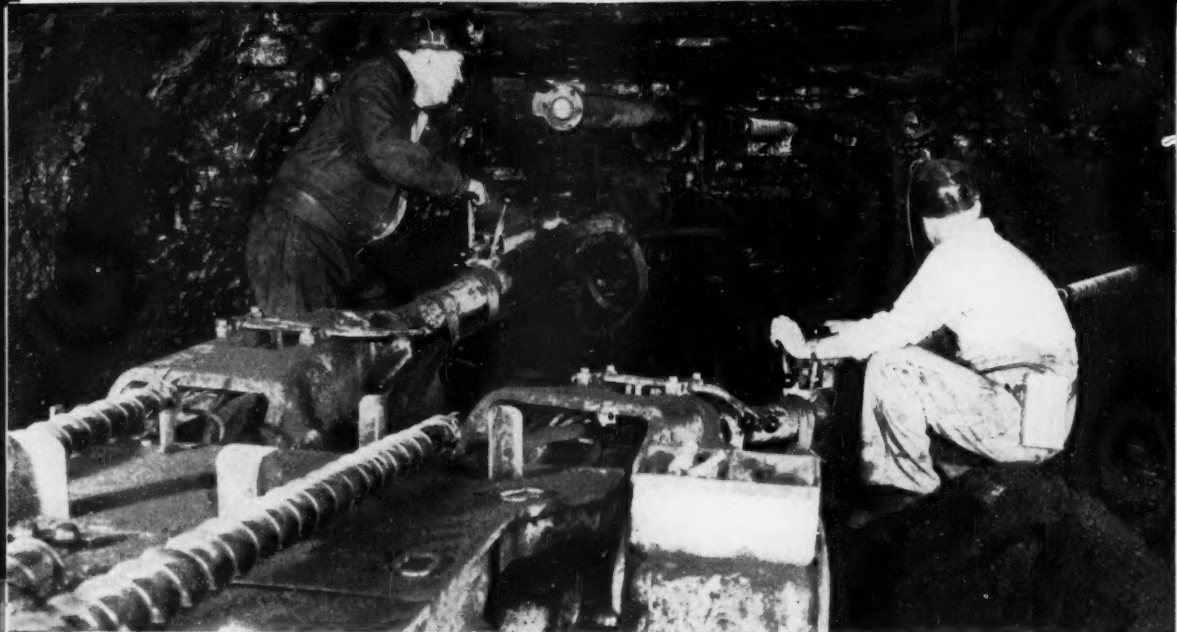
One result which may bring us closer to unravelling the mystery was recently reported by the late Dr. H. L. Bradt and Dr. B. Peters of the University of Rochester. They measured the abundance of lithium and other light elements in the primary radiation and concluded that on their voyage through space the cosmic rays do not traverse large amounts of interstellar matter and suffer few collisions with the gas atoms in the very rare atmosphere between stars.

However, these primary cosmic rays collide with atoms in the atmosphere to form many different kinds of particles, protons, mesons and neutrons. The energies of these secondary cosmic rays are many times greater than those available in man-made accelerators.

By studying these mysterious rays and the atomic havoc they cause, scientists expect to learn much about how and why the atom is held together.

Drs. Peters and Bradt regarded as a promising cosmic ray source either the sun or a region close enough to the earth so that the abundance of chemical elements at the source is pretty much the same as that of the radiation smashing into the earth, but stated that sources farther removed from us can as yet not be excluded.

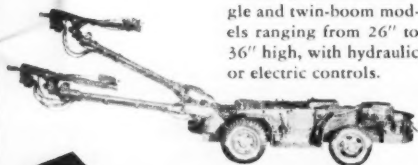
Since finishing these studies, just announced in the Physical Review, Dr. Bradt has died. Dr. Peters has recently returned from India where he further investigated the origin and nature of cosmic rays.



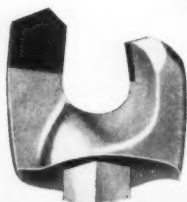
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CD-26 TWIN-BOOM  
COAL DRILL



JOY Mobile Coal Drills are self-propelled, flexible units, available in single and twin-boom models ranging from 26" to 36" high, with hydraulic or electric controls.



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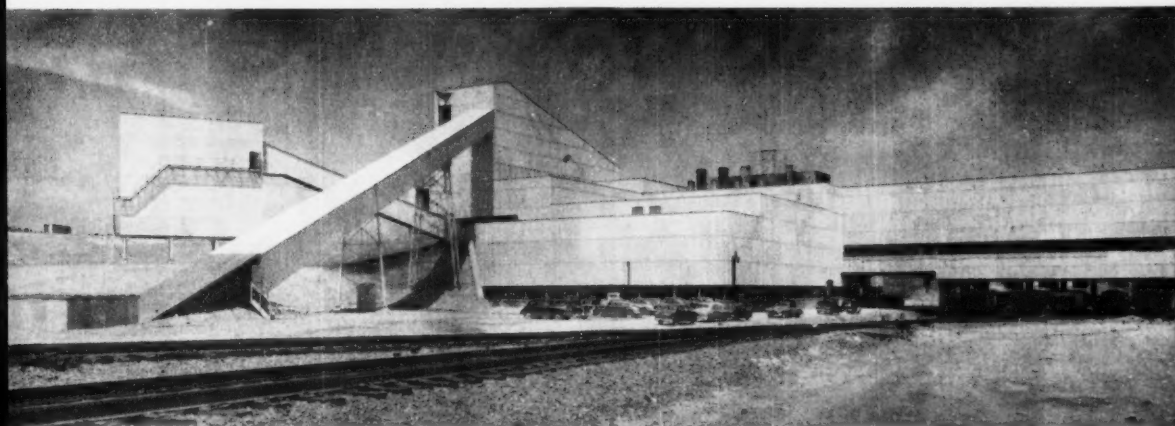
## JOY MANUFACTURING COMPANY

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A view of the Georgetown Preparation Plant from the southwest, showing the massive layout and elevation. Loading facilities are at the right, raw coal conveyor and refuse loading bin at the left.

## New Georgetown Preparation Plant of the Hanna Coal Company

The Georgetown Preparation Plant, largest coal cleaning plant in the commercial bituminous industry, was officially opened here today by the Hanna Coal Company Division of Pittsburgh Consolidation Coal Company.

Costing more than \$5,000,000 (exclusive of rail and weighing facilities) and requiring two years to build, it is the latest completed project in Pittsburgh Consolidation's large program of modernization and new development. Under this program the company has made capital expenditures of \$80 million during the past 5½ years.

The new unit is located two miles southeast of Cadiz in an attractive setting, which includes a man-made 65-acre lake. It will serve as a central preparation plant for the company's large surface mining operations that extend over the three Ohio counties of Harrison, Belmont and Jefferson. In addition, some coal from the company's underground mines in Ohio will be processed through this plant.

With a capacity of 1,500 tons of raw coal input per hour, Georgetown Preparation Plant will produce, on the average, an hourly output of 1,275 tons of clean product. This big scale of operation has made it possible to design for maximum efficiency in the layout of the

plant and in the selection of processes and equipment.

Preliminary operations of the plant show some unusual results in the quality and uniformity of the product. According to James Hyslop, president of Hanna Coal, tests on the first runs have shown that the coal is upgraded in heat value from a range of 10,000 to 12,000 BTU's per pound for the raw coal, to about 13,000 BTU's for the clean product. Through removal of refuse materials ranging in volume from 10 per cent to 30 percent of the input, the ash content of the coal is reduced to 7 percent or less.

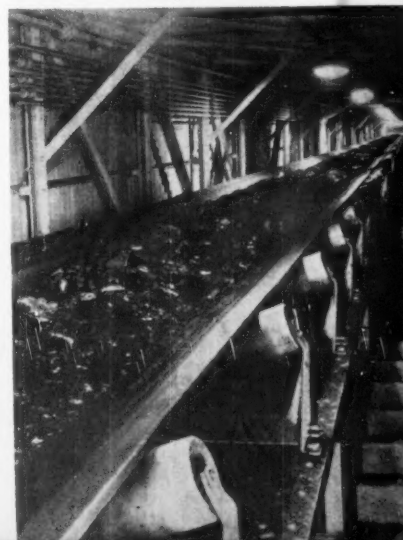
### Opening of the Georgetown Preparation Plant

Mr. Hyslop said: "We are doing something for the consumers of Ohio coals that could not be done prior to the development of the modern facilities incorporated in this plant. We are turning out an improved and uniform coal with a guaranteed low ash and low moisture, dust-proofed where desired, and classified or blended into sizes found most desirable for specific uses. As a result we are in position to provide the cleanest and best prepared coal produced in Ohio."

The plant proper occupies nearly two acres. It has five floor levels above the tracks and reaches 115 feet from tracks to roof. Coal is

received by rail or truck, being dumped into a below-ground coal bin, from where it moves up a 641-foot conveyor belt to shaker screens at the top of the plant. Here the

This enclosed raw coal conveyor belt starts the coal on its journey through the Georgetown Preparation Plant. The belt is 641 feet long and moves at a speed of just about 10 miles per hour. The coal is taken to the top of the Plant, where it is given a preliminary sorting by size and then sent through one of the three cleaning circuits incorporated in the preparation system.





The Georgetown Preparation Plant is here viewed from the north, showing the main entrance. Landscaping has begun and the company will build a sizeable parking lot in front of the plant with auxiliary lots near the scale house (off the picture to the left) and at the track level in the rear. The enclosed raw coal conveyor and the refuse loading bin are shown at the right.

coal is classified by size, supplemented by crushing of large lumps, and different size groups flow through the plant in three separate cleaning circuits.

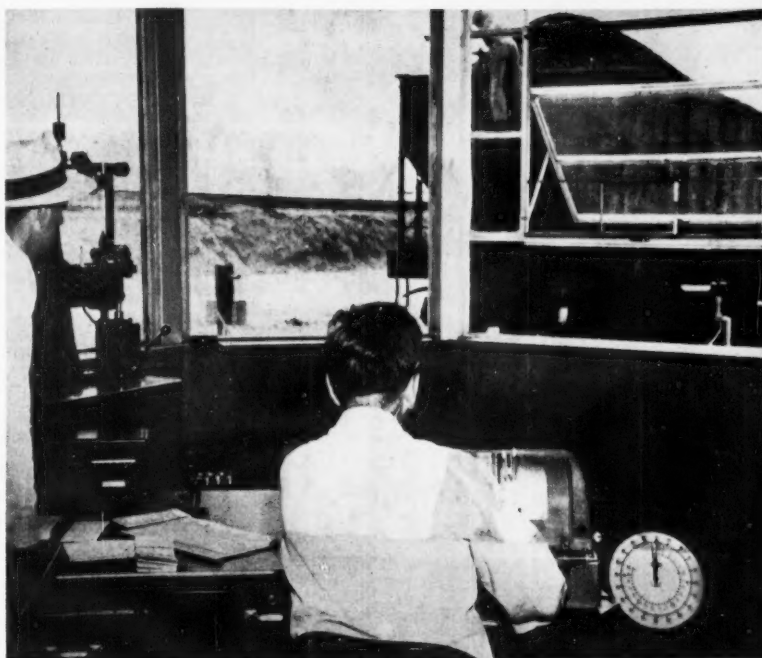
The smallest sizes, including all coal passing through a  $\frac{1}{4}$ -inch screen, are cleaned by a battery of Deister vibrating tables. There are 30 of these with a combined capacity of 300 tons per hour. A progressive drying procedure, which uses a settling tank, then centrifugal dryers, and finally, heated flash dryers, reduces the surface moisture in the cleaned fines to about 2½ per cent. This is maximum dryness for this size group without creating excessive dustiness.

Unusual feature of the Georgetown plant, and a measure of its preparation efficiency, is that the fines, once regarded as the poorest class of coal product, are the best product of the plant in point of heat value. The raw coal entering the Deister circuit has an ash content ranging from 12 to 20 per cent, which is reduced to 7 per cent or less by the cleaning process. At the same time the surface moisture, which ranges as high as 15 per cent for raw coal from the strip mines, is also reduced to a uniformly low level. As a result the clean product provides savings in freight and enables users to achieve greater efficiency in burning the coal.

The intermediate sizes,  $\frac{1}{4}$ -inch by  $1\frac{1}{2}$ -inches, pass through a Chance cone sand-flotation cleaning process. This circuit has a capacity of 500 tons per hour. The smaller sizes of the product in this process are dried to 2 per cent or less moisture in a new type of heated conveyor dryers.

The large sizes,  $1\frac{1}{2}$ -inches by 7-inches, are washed in two McNally Baum jigs, which were designed specially for this plant and have a capacity of 700 tons per hour. Jigs were selected for these sizes because, in addition to the clean product, they make an extra separation of a "middlings" product (coal which contains bands of impurities). The coal in this middlings material is salvaged by having the material crushed, re-sized, and recirculated through the other cleaning circuits.

A combination of storage bins and a mixing conveyor make it possible to blend the product and to load various sizes or combinations of sizes on any track. The plant has five loading tracks, each served by a belt loading boom. A car can be loaded every two minutes. Each



The easy use of the highly unusual facilities for weighing the loaded cars is illustrated here. The cars are weighed in motion on automatic scales under electronic controls, with the electric eye starting the weighing mechanism. The scale house is equipped with the most modern I.B.M. computing and accounting equipment, so that even much of the "red tape" is mechanized and the possibility of error is minimized.

Assembly of the trains has been similarly simplified. A man in the scale house does this once formidable job easily and quickly with the aid of an electric switching engine.

car of product is weighed automatically under electronic controls a minute after loading.

With about 21 miles of track servicing the plant, more than 800 railroad cars can be accommodated in the yards. Trains are assembled by a man sitting at a control panel inside the scale house, who does this job with the aid of an electric switching system. Two railroads, the Nickel Plate and the Pennsylvania, take the coal to market, which includes industries, utilities, and dealers throughout Ohio and the Great Lakes area.

The plant is connected with the mining operations and with all administrative and maintenance centers by a modern radio-telephone communications network.

#### Facilities to Avoid Stream And Air Pollution

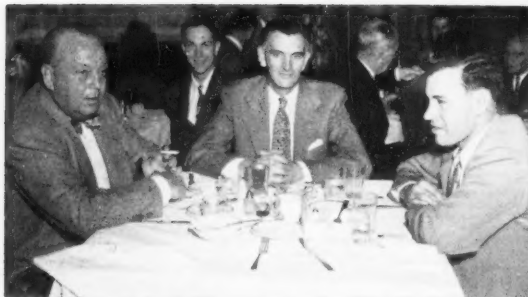
The importance of eliminating stream and air pollution was recognized in the design of the Georgetown Preparation Plant and special facilities were provided to permit

the fullest possible achievement of these aims.

At an extra cost of \$250,000, the whole system of water handling has been planned to avoid stream pollution. The water supply from the lake is clarified and recirculated after treatment in two settling tanks within the plant, and in a large auxiliary settling basin near the plant. Part of this system are the centrifugal dryers, which also contribute to clearing the water. As a result, the plant does not drain into the nearby streams and the only loss of water is through evaporation.

The plant also avoids the possibility of gob pile fires with their attendant air pollution. The refuse is crushed to a small size, taken by conveyor to a truck loading bin, and hauled for burial at the surface mining sites.

The heated flue gases used in the thermal dryers are washed in special chambers for dust removal before being vented to the atmosphere.



Left: Webb VanHorn, Summit Lumber Co.; Dale Miller, Crucible Fuel Co.; E. R. Cooper, Mgr. Mines for Jones & Laughlin Steel Corp.



Left: Rolf Arentzen, Lee-Norse Co.; Chas H. Meyers, Mine Safety Appliances Co.; G. G. Kingsley, General Electric Co.; Kenneth Bertlett, Gen. Mgr. Ellsworth Div., Bethlehem Steel Co.

## Two-Barrelled Purpose in Social Gatherings Like These Golf Parties



Left to right: Scotty Grove, of the Crucible Fuel Co., and assisant chairman, House Committee of the Greene County Country Club; Geo. Kimmick, Chief Clerk at the Fredericktown Mine of the Republic Steel Corp. and President of the Greene County Country Club; The Honorable Richard Maize, Chief, Dept. of Mines, Pennsylvania; Ed Siemon, Division Mgr., Hillman Coal & Coke Co.; and Frank Dunbar, retired.

Gatherings of business men in groups like that of the Western Pennsylvania Coal Operators Golf Association have in mind the good of not only the industry or profession they follow but also social advancement of the men and their family.

The coal producing industry, advancing rapidly as it is, must become concerned about two most important problems that are now facing it, namely, what to do to obtain more mechanical engineers to develop new and better machines and how to bring about better education and social advancement in coal producing areas.

We must take more seriously the significance of higher education, for education is the root of human progress. An occupied mind is not likely to be given over to hating and suspecting, one of the serious evils in our industry.

Knowledge is in itself the basis for civilization. Any widening of the borders of knowledge imposes an increased responsibility on individuals through the



Left: Harold Dawson, Victoria Coal Co.; Harold Sager, Sager Coal Co.; A. L. Brautegam, Victoria Coal and H. L. Williams, Victoria Coal Co.



Left: L. C. Burry of the Tippins Machinery Co.; Frank Waggett, Gen. Supt. for all Baton operations; Geo. Tippins, of the Tippins Machinery Co. and W. S. Wawhenny, Sr., retired.



possibilities it gives for shaping the conditions of human life.

Within every community it is very much possible for citizens to strive together for the common good on a basis for public knowledge, for a general betterment in living conditions. Arguments for upholding barriers for information and intercourse, based on concern for national ideals and intercourse, must be weighed against the beneficial efforts of common enlightenment and the relieved tension resulting from openness. A free speech, therefore, so that the individual can assert himself solely by the extent to which he can contribute to the common culture and is able to help others with experience and resources must be the goal to be put above everything else.

All educability is dependent upon innate capacities of growth. Children inherit those capacities from immediate and remote ancestors. More knowledge, therefore, needs to be applied at the beginning of the human life cycle. Through broadened methods of development diagnosis and supervision in infancy, through individualized growth guidance in nursery and elementary schools, we can strengthen the stamina of the child and of the family unit. Destructive gifts and talents can be developed to positive and constructive expressions, particularly in the first five years of life.

Educability of our children, based on our present school system is unsatisfactory. Reliance on the present system resulted in the denial of educational opportunity to those who need it most. Broader concept of educability as potential capacity for social or personal valuable behavior is needed. Research in education should identify and measure these potential capacities that may be developed by schools, and that are indices of success in all walks of life. Development of favorable capacities in humans should be the end of all education.

Culturally speaking, the human species is composed of discrete biological entities called individuals. Culture finds its expression in the behavior of indi-

vidual humans. Culture is an organization of human beliefs and customs; it is a cumulative tradition passed down from one generation to another. Culture can be likened to a stream of selective elements added to the society of man that are continually interacting with one another to form new and better elements while eliminating others. We can, therefore, sometimes explain the behavior of the individual human in terms of the culture that embraces him.



Left: J. A. Brookes, Gen. Mgr., Mather Collieries; H. H. Jones, Pa. Dept. of Mines; E. D. Gall, McCartney Coal Co.; Harry L. Swihart, Supt. Buckeye Coal Co.; Jack V. McKenna, State Mine Inspector; Martin Valeri, Buckeye Coal Co.; A. E. Shannon, Fairmont office and J. P. Howell, Pittsburgh Branch Manager of the Jeffrey Mfg. Co.



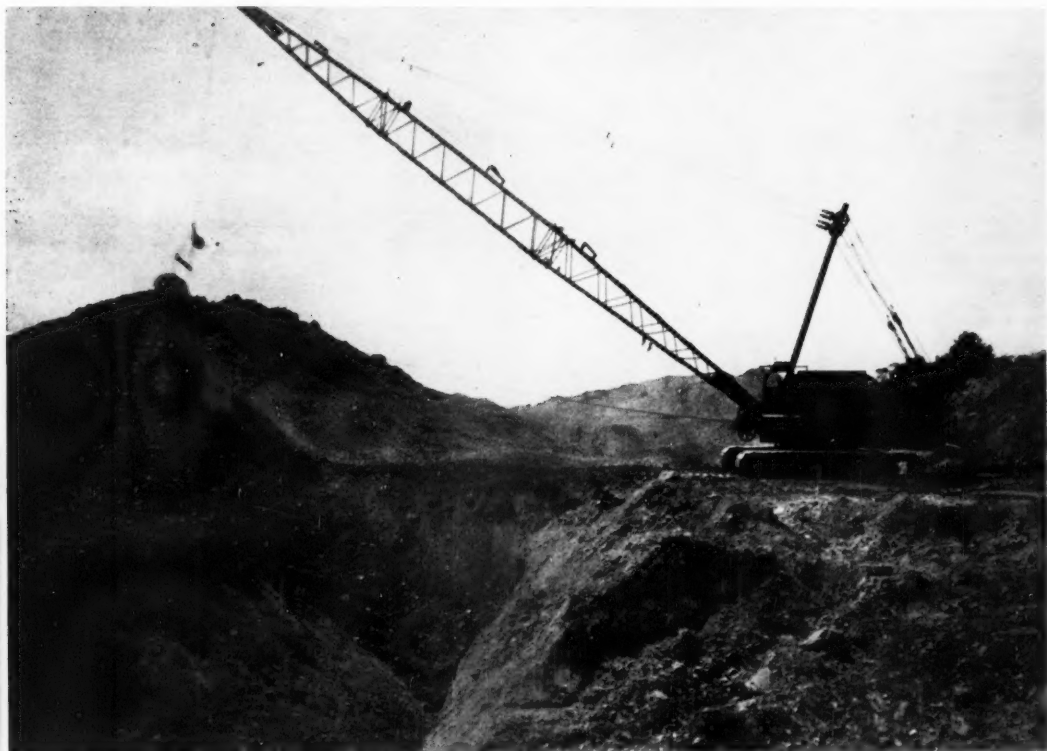
Left: Dutch Kinter, Rochester & Pittsburgh Coal Co.; Robt. J. McGinnis, Kennametals, Inc.; J. F. Rondinone, Whitney Chain & Mfg. Co.; A. J. Stephenson, Fairmont Supply Co.



Left: Elliot Williams, Hewitt Rubber Co. of Pittsburgh; R. E. McEntire, Sales Representative, for Frick & Lindsay, and Harold Lusk, Pittsburgh branch manager for Wilmot Engineering Co.



Left: George Stacey, Master Mech., Harwick Mine Duquesne Light Co.; A. B. Arrisson of the Arrisson-Kennedy Co.; Jim Elkin, Mgr. Mines; Jim Younkens, Gen. Supt. Mines and Red Truax, Supt. of the Harwick, all with the Duquesne Light Co.



Manitowac Model 4500 working at the operation of the Pilgrim Coal Company

## Modern Equipment at the Strip Operation of the Pilgrim Coal Company

The Pilgrim Coal Company is stripping an unknown seam of coal on State Route 19 just South of Mercer, Pennsylvania. This seam of

coal runs about forty inches in thickness and is believed to be either the Lower Kittaning or the Brookville coal.

Cover on this unknown coal, on this property, is 27 feet of loam and clay, and 28 feet of soft shale, indicating that it all had been washed



Office building and modern preparation plant of the Pilgrim Coal Company



Link-Belt Speeder shovel loading out coal.



Four inch Gorman-Rupp pump operating in the pit.

over the coal. In wet weather the loam and clay are hard to hold on the spoil bank.

The operation was started by making a box cut to get down to the coal. At the present time all the stripping is being done by a Mantowac dragline having 120 foot boom and 6 cubic yard Hendrix bucket.

The surface of the coal is scraped clean with Caterpillar tractors.

The nature of the coal is hard and it must be drilled and shot for loading. Air for powering jackhammer drills to shoot the coal is furnished by a Le Roi Tractair, a machine which combines many other duties with its job of furnishing air around the strip mine.

Being in a box cut an operation of this kind requires much pumping of water, particularly in a wet season like this last spring and

early summer. Pumping in the pit was done by Gorman-Rupp and Jaeger pumps.

Loading out of the coal is being done with a Link-Belt Speeder shovel having  $\frac{3}{4}$  cubic yard dipper. The coal is processed in the finest preparation plant in the area. All the output is trucked from this preparation plant to a wide variety of markets.



LeRoi Tractair in the pit, drilling the coal



Hough Payloader is used to load truck from the stockpile of a certain size.

## NON-EXPLOSIVE DEVICE FOR BREAKING DOWN COAL

A new step to promote safety in coal mining will result from the use of a non-explosive device for breaking down the face of the coal, revealed here by the Du Pont Company, in which gas pressure is used to cause breakage.

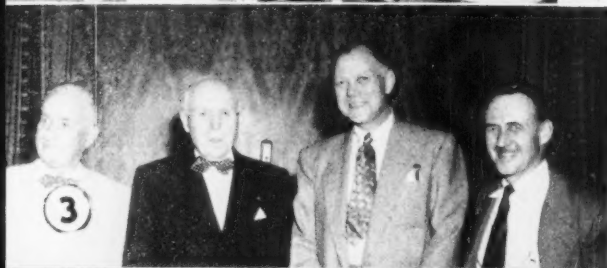
This device utilizes the high pressure of a gas generated inside a steel tube which is inserted into an ordinary drill hole driven into the coal seam. Chemical reaction is started by an electric current which produces heat to initiate the action. The same heat destroys the starter wire as soon as electric current is no longer needed.

The tube which contains the chemical is closed at the outer end by a plug with electrical connections, and at the other with a disk that is ruptured by the compressed gases formed. When the gas has been liberated in sufficient quantities to create a desired pressure, the disk breaks and the gas rushes out to break down the face of the coal. No flame is produced.

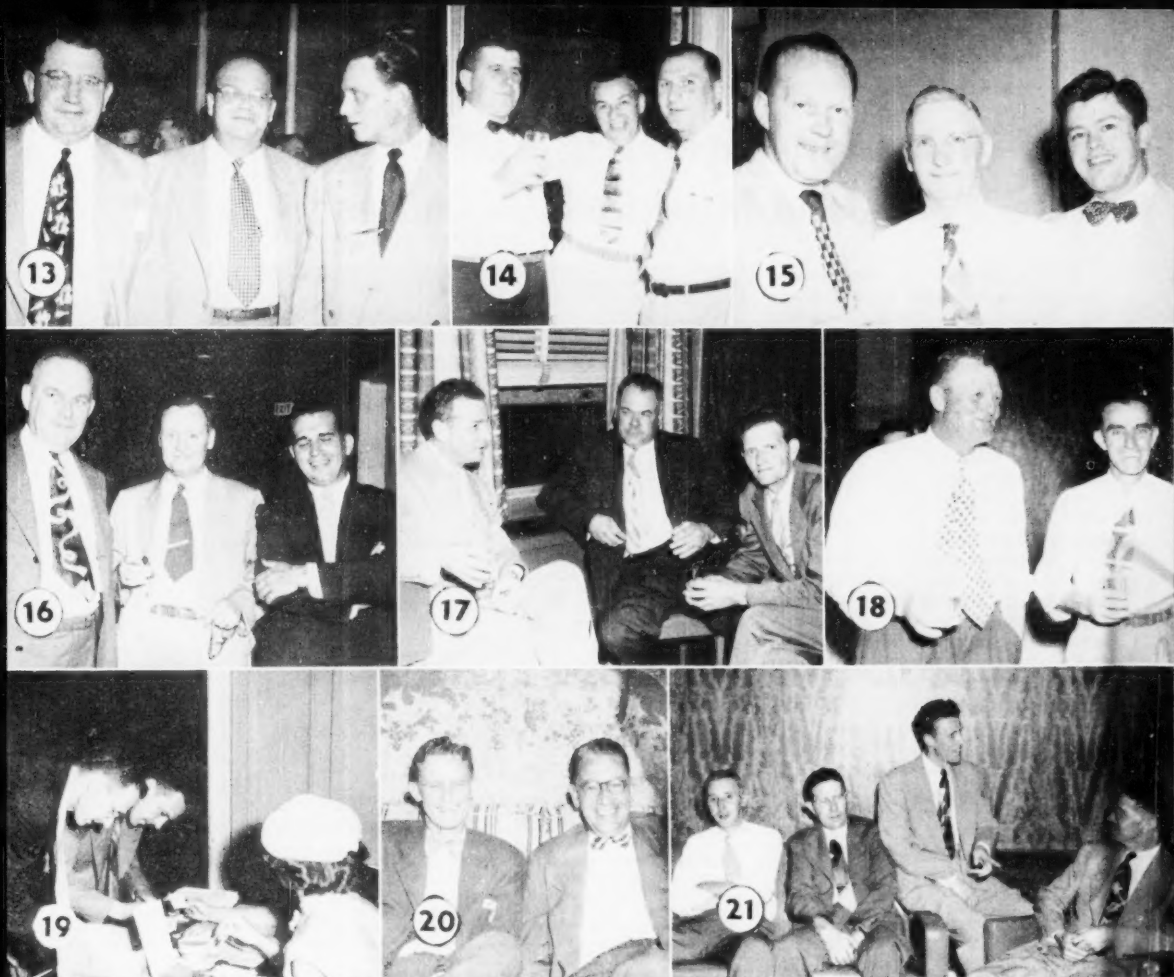
This non-explosive method for use in mining coal is somewhat similar to one now employed which utilizes compressed air to break down the face of the coal. In the latter a heavy compressor is used

and the compressed air is carried to the bore hole by hose and released from a special nozzle which is inserted in the hole.

The new Du Pont device is called a Chemechol. The chemicals used are not revealed. It is already under extensive field testing. The tube used can be refilled in the mine with another chemical unit and disk. The device can not be activated by small electrical stray currents, nor by the high currents used in mine power and lighting. It can not be detonated by blasting caps or high strength dynamite.







## Mineral Producers Hold Annual Meeting

The Mineral Producers Association held its annual meeting June 28 at Pittsburgh. The bituminous coal strippers heard addresses by Charles W. Connor and Don Sullivan of the Defense Solid Fuels Administration; Stanton W. B. Wood of the U. S. Department of Labor; George A. Lamb, of Pittsburgh Consolidation Coal Co., and Col. Jack Major, humorist of Paducah, Ky. Officers of the association include R. R. Bowie, president; R. S. Walker, vice-president; and F. H. Mohney, executive secretary.

1. Back row: F. H. Mohney, executive secretary; R. R. Bowie, Bowie Coal Co. Grove City and president of the assn.; W. C. Altwater, Pittsburgh & Shawmut Coal Co., Kittanning; Charles B. Batton, Connellsville Coal & Coke Co., Pittsburgh; Allan R. Davidson, Two River Co., Burgettstown; Front row: Harry D. Ford, Ford & Gaskill, Mastontown; W. B. Bannister, Pittsburgh Coal Co., Imperial; Mathew A. Crawford, general counsel of the assn.

2. Lloyd F. Stamy, Beckwith Machinery Co., Pittsburgh; H. G. Strubbe, W. B. Neal, W. K. Walton, all of Pennsylvania Railroad, Pittsburgh; R. Phillips, Atlas Equipment Co., Pittsburgh; Walter Adams, Bucyrus-Erie Co.; M. J. Keane,

Hoy T. E. Cox, Jr., Atlas Equipment Co.; Harley Matthews, Brake Engineering Co., Wheeling, W. Va.; John Ziros, Ziros Coal Co., East Brady.

3. C. E. McAninch, Ford & Gaskill, Uniontown; Richard Maize, state secretary of mines, Harrisburg; Robert Laing executive director of Central Pennsylvania Coal Producers Assn., Allentown; Eric W. Kerr, Imperial Coal Corp., Uniontown.

4. Charles W. Connor, Don Sullivan, Defense Solid Fuels Administration, Washington, D. C.; R. S. Walker, vice-president of the assn., Bradford Coal Co., Bigler; George A. Lamb, Pittsburgh Consolidation Coal Co.

5. G. S. McCaa, J. M. Black, Samuel

Cortis, A. J. Nairn; Edward Gall, McCorney Coal Co.; W. G. Thomas, deputy state secretary of mines; J. H. Dease, William Powers, W. J. Ivill, F. E. Schroyer, G. S. Struble, J. A. Blackburn. All except Mr. Gill and Mr. Thomas are state mine inspectors.

6. E. J. White, Mid State Const. Co.; J. J. Janssen, Highway Equipment Co., Pittsburgh; R. W. Neal, V. M. Eeclberter, P&N Coal Co.; H. A. Hare, Pittsburgh Cummins Engine Co.; H. T. Johns, P&N Coal Co.

7. J. H. Gunst, Beckwith Machinery Co.; B. B. McGuinnis, state senator; Olaf E. Olsen, and A. R. Fenrich, state legislators.

(Continued on Page 23)

## Rules for Conducting National First-Aid and Mine Rescue Contest

1. The first-aid and mine rescue contests will be held in the Coliseum, Fairgrounds, Columbus, Ohio, October 2, 3, and 4, 1951.

2. There will be no limitations as to the number of teams admitted to the contests from any one State, district, company, or organization.

3. The members of all teams must be bona fide employees of the mine or mines; smelter or smelters; mill or mills; petroleum refinery or other branch of the petroleum industry; quarry or quarries; or plant of an allied industry, represented by the team, and may be underground or surface workers in or about the mine, smelter, mill metallurgical plant, petroleum operation, quarry, or allied industry.

4. Any organization, union, club, or local benefit society may enter a team. The members of such team shall be actual members of the said organization and shall be employed in or about a mine, smelter, mill, petroleum plant, quarry, or allied industry plant in the local district covered by the membership of the organization.

5. No physician, trained nurse, safety engineer, safety inspector, former Bureau of Mines safety instructor, State safety instructor, or a full-time paid first-aid instructor regularly employed by a company shall be a member of a team.

6. Entry shall be submitted in writing or by wire to Mr. W. H. Tomlinson, Secretary, National First-Aid and Mine Rescue Contest, c/o U. S. Bureau of Mines, 201 Post Office Building, Vincennes, Indiana, on or before September 17, 1951. On or prior to this date, the name of the captain of each contesting team must be submitted. Substitutes will, however, be allowed after September 17, if necessary, by proper statement in writing. No entries will be received after September 17, 1951, except that in cases where participation in the National contest is determined through elimination processes in district, State, or other contests held on or after September 17, 1951, teams from these contests will be permitted to enter the National meet subsequent to September 17, 1951. Provided further, that no notice of entry of any team will be



Newest developments in equipment to protect miners and industrial workers were studied recently at the Mine Safety Appliances Co., Pittsburgh, by safety, labor and management officials from Sweden, Norway, Denmark and Turkey. The group of 12 was the first industrial safety team to be brought to this country by the U. S. Department of Labor and the Economic Cooperation Administration. About 10 additional teams are expected to participate. In this photo, shown examining an MSA Miner's Self-Rescuer, are (left to right) Henning Nielson, Danish Federation of Employers Organization; Olaf G. Ruyter, Norwegian State Labor Inspector; E. W. Gilliland, MSA's chief chemist, and Gregers Koefoed, director of the Danish Insurance Society.

accepted after 12 o'clock noon, Monday, October 1, 1951. Entry blanks may be obtained by application to the nearest Bureau of Mines Branch or Section office.

7. The same team may enter either the mine rescue or first-aid contests, or both.

8. The same team members who participate in the first-aid contest, exclusive of the patient, must constitute the mine rescue team in order to qualify for combination prizes.

9. Each team entering for the mine rescue contest and each team entering for the first-aid will be given a number to determine its order or performance and field location. Such numbers will be assigned by lot and drawn by the teams as they register.

10. Registration of first-aid and mine rescue teams, judges, and con-

test officials will be at Hotel Neil House, Columbus, Ohio, between the hours of 1:00 p. m. and 10:00 p. m., October 1, 1951. Registration will be continued at the Coliseum between the hours of 8:00 a. m. and 8:45 a. m., October 2, 1951.

11. Evidence must be presented to the contest officials that each member of a mine rescue team has had a thorough physical examination by a qualified physician not more than 30 days before the contest. At the time of registering, the captain of each team will be required to turn over to the registrars a Bureau of Mines "Physician's Examination Form" signed by the examining physician, showing that each member is physically sound and capable of performing strenuous work under oxygen. In addition, a physical-fitness examination by a Bureau of Mines representative will be given each team



For emergencies in air contaminated by carbon monoxide, the Mines Safety Appliances Company, Pittsburgh, Pa., has developed a new "Self-Rescuer," a small, compact, lightweight device to protect the wearer for 30 minutes in CO concentrations found after fires or explosions in mines or other underground or enclosed areas. The apparatus has been tested and approved by the U. S. Bureau of Mines for self rescue from carbon monoxide contaminated air.

member immediately before the preliminary examination of his team. Physician's Examination Form (Bureau of Mines Form 6-141) may be obtained from the nearest Bureau of Mines' Branch or Section office.

12. Any team not on the field and ready, when the first event for which it is entered is announced, will be disqualified from the contest.

13. Subject to possible later revision, the preliminary examination and testing of rescue crews and apparatus will commence at the Coliseum, Columbus, Ohio, 8:30 a. m., October 2, 1951. The mine rescue contest proper will be held at approximately the same time. Each team after completing the preliminary examination will be conducted to the contest gallery where it will work the mine rescue problem.

14. Subject to possible later revision, the first-aid contest will begin at 1:00 p. m., October 3, and at 9:00 a. m., October 4, 1951, and continue until the completion of the contest.

15. The use of any type of mechanical resuscitating device will not be permitted in the first-aid or mine rescue events. Provided that this rule will not prohibit the use of any device approved by the United States Bureau of Mines which will afford the proper protection for a subject (patient) under

the conditions specified in the problem.

16. After the completion of the first-aid and mine rescue contests, teams with their equipment must remain on the field until announcements are made regarding ties, if any.

17. Any team which has left the field or whose equipment is not available when called upon to com-

pete in ties will be disqualified.

18. Possible ties in contests will be decided by special events; if time does not permit, they may, by mutual agreement, be decided by lot.

19. Information regarding cups and prizes will be found in the program of the meet which will be given to the teams when they register.

20. The first-aid and mine rescue teams winning prizes will be officially announced during the evening of October 4 by a person or persons designated for this purpose.

21. Following the awarding of prizes, the captain of each team will be furnished with his team rating.

22. All rules relating to the contests will be rigidly enforced.

• Kennametal, Inc., Latrobe, Pa., announces the appointment of Ivan J. (Dutch) Kinter as sales and service representative for the territory of New Mexico, Arizona, and eastern and southern Colorado. Before Mr. Kinter's appointment to this position, he had spent more than 20 years on the production staff of the Rochester and Pittsburgh Coal Company, Indiana, Pa.

• Geologie, Mineralogie und Lagerstattelehre, a very comprehensive and well illustrated 310 page book, in the German language, on the mineral deposits in Central Europe, by Professor Dr. Paul Kukuk, has just been published by Springer Verlag OHG, Berlin, Germany.



Model 27FDT-72W Euclid coal hauler at the Badgett Mine Stripping operation, Madisonville, Ky. Hauls up to 20 tons.



This electrically operated miniature Link-Belt Speeder dragline was on exhibition at the Cleveland Coal Show.

• A roof bolt testing mechanism is made from a 50-ton Blackhawk Porto-Power jack with separate hand-operated oil pump and gauge mounted for easy visibility. Sufficient hose is used to allow the operator to stay back out of danger. It works on any type or any size of roof bolt in use to date.

• The Euclid Road Machinery Company of Cleveland 17, Ohio, has announced two new Rear-Dump models of 22-ton capacity with spring mounted drive axle.

The model 45TD is powered by a Buda engine of 286 h.p., and the model 46TD has a 300 h.p. Cummins engine. Both models have a

ten-speed transmission and are available with standard or quarry body. A heated body which speeds the dumping operation during cold weather operation is available as optional equipment. Top speed of these Euclids with full payload is 32 m.p.h.

The Euclid double reduction planetary type axle is mounted on free-floating springs and is positioned to the frame by swivel-connected longitudinal radius rods. This mounting permits movement of the springs in the spring brackets and avoids the leaf breakage caused by twisting on rough haul roads. The Euclid spring suspension provides for varying the spring contact centers according to the load—a longer flexible spring for an empty unit and a short, rigid spring for heavy loads. This assures a smooth, comfortable ride and permits faster travel speeds on the loaded and return haul.

An air assist clutch, hydraulic booster steering, and driver's seat that is fully adjustable for weight and position also contribute to ease of operation and driver comfort.

A 16-page catalog in two colors illustrates these new Rear-Dump Euclid models and contains specifications of the engines, transmissions, drive axle, frame, body, etc. It may be obtained by requesting Form No. 121 from the company or the Euclid distributor in your area.



Picture assembled roof bolt testing mechanism.



W. C. Fullhart of the G. A. Stiles Co., Leeper, Pa., tries the operator's seat of a "Caterpillar" D4 Tractor equipped with TRAXCAVATOR as E. L. Mix, Beckwith Machinery Company Bradford Branch Manager, discusses the Coal Show with R. H. Fullhart, also of the G. A. Stiles Co. Model Dolores Kent of Parma, Ohio, graces the unit.



## MINERAL PRODUCERS MEETING

(Continued from Page 19)

8. Back row: Robert Bailey, Layne Wyre, Robert Bailey Coal Co., Morrisdale; W. T. Phipps, United Eastern Coal Sales, Indiana; J. B. Whalen, Greensburg-Connellsville Coal Co., Pittsburgh; Front row: Elmer Whitmyre, A. T. Green Machinery Co., Glenshaw; Reg Mears, Robert Bailey Coal Co., Larry Toomey, Stoner Herr, A. T. Green Machinery Co.

9. Larry Cummins, Atlas Equipment Co., Pittsburgh; C. W. Veach, F. W. Adams, Mellon National Bank & Trust Co., Pittsburgh; Paul Reinhold, Atlas Equipment Co., and president of the American Road Builders' Assn.

10. Back row: Merritt J. Harding, Joseph E. Johnson, Emil A. Lefkof, Raymond A. Simpson; Front row: Daniel Dunmire, Eugene W. Beatty, all with state department of forests and waters.

11. G. W. Vickroy, Carbon Coal Co., Grove City; J. L. Wetzel, J. L. Caruthers, Atlas Powder Co., Pittsburgh; Harry Sichi, Dravo-Doyle Co., Pittsburgh.

12. W. C. Altvater, Pittsburgh & Shawmut Coal Co., Kittanning; E. N. Lefkof, state department of forests and waters; Dr. S. A. Braley, Mellon Institute, Pittsburgh; W. B. Bannister, Pittsburgh Coal Co., Imperial.

13. Lee Reynolds, Highway Equipment Co., Pittsburgh; Max Bradshaw, and J. M. Haile, Allis-Chalmers Mfg. Co., Milwaukee.

14. Stanley Lasky, Boswell Fuel & Const. Co., Johnstown; Samuel Weitzner, Michael Rogan, Rogan Coal Co., McKeesport.

15. George Meiklejohn, Highway Equipment Co.; Charles Freeman, Robert Bailey Coal Co.; R. M. Elder, Cummins Engine Co., Pittsburgh.

16. Russell G. Dateman, C. E. Powell Coal Co., Blandenburg; H. W. Findley, West Freedom Mining Co., Carnegie; W. T. Phipps, United Eastern Coal Sales, Indiana.

17. N. J. Matz, Beckwith Machinery Co.; J. C. McKee, Seymour Coal Co., Koppel; C. Dodds, Dodds Coal Co., New Galilee.

18. P. Delmontagne and F. J. Klein, Greensburg-Connellsville Coal & Coke Co.

19. John Zarle and Wayne Cornelius, of Michael Baker, Jr., Inc., Rochester, Pa., at the registration desk.

20. Hugh Cameron, Beckwith Machinery Co., and H. S. Robertson, Bucyrus-Erie Co.

21. Merle Urey, Clifford Turner, Bowie Coal Co., Grove City; N. Woodside, Beckwith Machinery Co.; Paul E. Turner, Bowie Coal Co.

## AIR-PRESSURE BLASTING

An improved device for blasting coal out of the natural seams in which it occurs by air pressure instead of explosives brought patent 2,627,291 to Frank H. Armstrong, Chicago, and Edward C. Filstrup, Jr., St. Joseph, Mich. Patent rights are assigned to Armstrong Coalbrea Company, Benton Harbor, Mich.

In this method of breaking down coal faces in mines, a method preferred over ordinary blasting which presents a fire hazard, holes are drilled in the coal as usual. Then air under high pressure is released suddenly in the drill hole, causing rupture to the coal. The improvements in this device include a novel, soft, flexible sealing means to retain the high pressure of the charge and protection of the seal against dust and dirt.



Caterpillar Diesel D13000 Engine powers the Manitowoc Speed-Crane with 70' boom and 1 1/2 yd. bucket working on coal stripping operations at Knoxville, Iowa. A Caterpillar Diesel D8800 Engine drives a compressor drilling shot holes prior to blasting operations. A Caterpillar Diesel D8 Tractor with No. 88 Bulldozer is also working on this job.



Left to right: Mr. Howard Wilson, Mr. Edgar Weldon and Mr. Bill Hetherington. Mr. Weldon owns Caterpillar equipment working on coal stripping operations at Knoxville, Iowa. (Caterpillar Diesel D13000 and W8800 Engines and D8 Tractor with No. 88 Bulldozer).

## SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills



Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers.

THE SALEM TOOL COMPANY

SALEM, OHIO, U.S.A.

• The United States Bureau of Mines has just made available its report of "Production of Coke and Coal Chemicals From Coal-Gas Reports in 1950." Information concerning coke produced, coal charged, coke used and sold, including similar information by states and geographical regions, is included. Copies will be furnished upon request to the National Coal Association.

• Cleveland, Ohio. A new unit, known as the Sealtite Dustroyer, designed to prevent creation of dust during coal deliveries, is announced by the Midland Sealtite Corporation.

It is said that when Sealtite is properly sprayed by a Dustroyer around a coal bin and any remaining coal immediately before a delivery, it lays the dust and puts a sealing coat around the exposed coal. This Sealtite treatment prevents dust disturbance when new coal enters bin.

Compact and light weight, the Sealtite Dustroyer is a self-contained, automatic pressure sprayer. Finished in hard enamel, it has a heavy gauge steel casing and handle. All fittings are brass. Interchangeable nozzles furnish stream or spray jet, as desired. A 6-inch nozzle extension can be attached when greater spray ranges are desired. Unit has an easily removable cap for speedy refilling. Standard model Dustroyer is quickly pressure charged by air-line tire chuck or hand pump. Deluxe model, shown here, is equipped with additional CO<sub>2</sub> bulb filler cap for convenient field charging. Unit is factory tested for safety to 300 lb. pressure.

Sealtite Dustroyers, now in production, are ready for early shipment. Full particulars on request



to Midland Sealtite Corporation, 608 Union Commerce Bldg., Cleveland 14, Ohio.

• A new 10-ton Diesel mine locomotive, approved by the United States Bureau of Mines, has been placed on the market by the Nation-

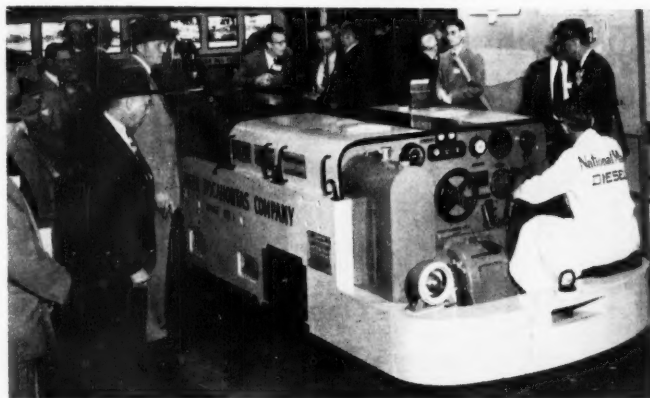
• A new bulletin descriptive of its complete line of heat-resistant paints is announced by Speco, Inc., Cleveland, Ohio.

This bulletin gives application and product data for the five Speco heat-resistant paints. The latter includes HEAT-REM (Standard) Aluminum, HEAT-REM H-170 Extra High Heat Aluminum, Speco "M" Aluminum for moderately hot surfaces, Speco "HSE" (hot surface elastic) Black and Speco "QD" (quick drying) Black.

The Speco line of heat-resistant paints is reputed to meet every type of hot surface need.

For bulletin copies write Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio. Ask for L-4161.

al Mine Service Company, Beckley, W. Va. This locomotive is flame-proof and operates with an excess of air to assure freedom from carbon monoxide.



The approved Diesel locomotive was shown at the Coal Show in Cleveland.

STAR LIGHTWEIGHT ALUMINUM  
JACKS FOR ROOF TIMBERING  
and  
SAFETY POST WORK

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DRILLING  
PROBLEMS!*

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BITUMINOUS COAL LANDS  
TESTED . . . SATISFACTORY  
CORES GUARANTEED

**HOFFMAN BROS. DRILLING CO.**

Punxsutawney, Pa.

Call 382

"WE LOOK INTO THE EARTH"



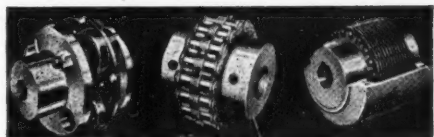
### CORE DRILLING

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- Pre-Grouting Mine Shafts
- Mine Drainage Bore Holes
- Large Diameter Holes for Ventilation & Escapeways

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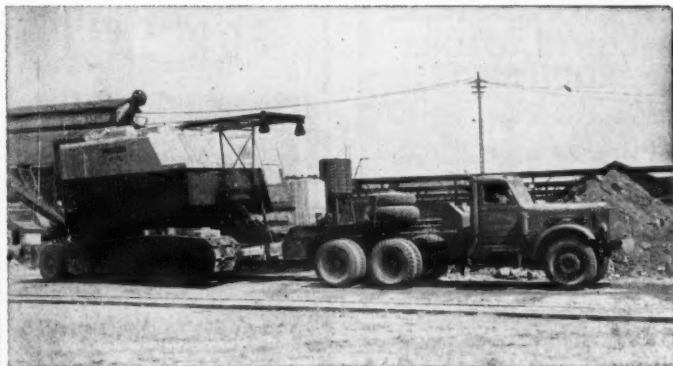


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## MOVERS of Coal Stripping and Contractor's Equipment



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## MOORE-FLESHER HAULING CO.

MOVERS of Coal Stripping and Contractor's Equipment

### TWO LOCATIONS

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Phone ALlegheny 1-3600

And

Stoney Hollow Boulevard, Steubenville, Ohio, P. O. Box 547

• George Love, president of the Pittsburgh Consolidation Coal Company, declared, in a speech in New York recently, that the U. S. coal industry, in relation to the same industry in other countries, is far more progressive and advanced than any of America's other basic industries to their European counterparts.

Today, he said, practically eighty per cent of the coal industry's production is mechanically mined and loaded, and approximately fifty per cent of it is mechanically cleaned and prepared. Tremendous sums of capital have been put back into the mines to do an even better job of producing and preparing coal.

Mr. Love went on to say that the coal miner is the highest paid worker in industry, and further, that labor represents a much higher proportion of total cost than it does in competing fuels. But, despite this and the rising costs of materials the industry must buy, coal is selling at prices lower than two or three years ago, while prices of practically every other product have risen.

All these attributes, he said, are important because coal, being America's only abundant fuel resource, must fill more and more of the nation's fuel needs as the years pass.

Coal, he declared, is a strong, progressive, enterprising business, proud of its present and its prospective contributions to the welfare of the country.

• Glide-stop device, for high-speed passenger elevators in buildings, permits the car to travel at high speed until within 20 inches of a floor, then to come to a smooth gradual stop. Vertical magnets on the top of the car provide automatic controls.

**NEW AND RELAYING RAILS**  
**"FASTER From FOSTER"**



Largest stocks in U.S.—New and Relaying Rails, Track Tools and Accessories. All your trackage needs—new installations or replacements filled "FASTER from FOSTER." All material backed by Foster Guarantee. Write for Catalog.

• STEEL SHEET PILING • PIPE

**LB FOSTER CO.**  
 Pittsburgh 30, Pa. New York 7, N. Y.  
 Chicago 4, Illinois Houston 2, Texas

• Five simple tools, quickly and easily made from inexpensive materials found in most service shops, are aiding in the salvage and re-conditioning of final drive bellows seals in track-type tractors thereby helping extend the nation's supply of copper and tin.

The materials for repair are readily available, the tools required can be easily fabricated in any shop, and the technique is not difficult, according to Caterpillar Tractor Co., Peoria, Ill. A program for the conservation of these seals is now being carried on by this firm and its world-wide distributor organization as part of a large-scale, long-range field repair and conservation program involving many parts made of alloy steels, copper, aluminum, brass and bronze going into Caterpillar machines.

These tools include a T-handle for removing bellows seals; a shaping tool or "dolly" with shaping pliers used to "iron out" corrugations, making them smooth and uniform in size; a seal spreader for expanding the seal and exposing the breaks making them accessible for repairs; a crowfoot punch for bringing the retaining rings back to shape on a flat steel plate.

In the past it has been common practice to replace all worn or damaged final drive bellows seals with new parts rather than attempt repair of the bellows. Many bellows are rendered useless because of the serious damage occurring during removal. It is also known that accumulations of mud and dirt plus the adhesive strength of the cement used in assembling the seal gaskets, make bellows seal removal difficult.

**WANTED**  
 42-T BLAST HOLE DRILL  
 With Hydraulic Jacks  
 Frank Swabb Equipment Co., Inc.  
 313 Hazleton Nat'l Bank Bldg.  
 Hazleton, Pa. Telephone 4910

**SPECIAL BARGAIN**  
 3—Type A3G Goodman Duck bills.

**COAL DRILLS**  
 2—Jeffrey—250 v. DC.

**COMPRESSORS—SPECIAL BARGAIN**  
 7—240 cfm Westinghouse 3 cyl. vert. 150 lb. pres. dir. con to 50 HP. AC Slip ring or DC Motors.

**MOTOR GENERATOR SETS—250 V. D.C.**  
 Motors 220/440 v. or 2200 v.—3 hp., 60 cy.

No.	KW	Make	RPM
3	250	Westinghouse	1200
1	200	Westinghouse	720
2	200	Westinghouse	1200
1	100	Westinghouse	700
1	100	General Electric	900
1	100	Westinghouse	600
1	100	General Electric	1800
1	100	Reliance	580
1	100	Delco	1200
2	90	Westinghouse	680
4	75	Westinghouse	720
1	75	Westinghouse	1200
1	60	Westinghouse	1200
1 NEW	50	General Electric	1800
3	40	Westinghouse	900
2	30	Westinghouse	720

**125 V. DC M.G. Sets**

1—100 kw. G.E.	125 v. 900 rpm.	220/440 v.
3 ph. 60 cy. AC Syn.		
1—125 kw. G.E.	125 v. 1200 rpm.	220/440 v.
3 ph. 60 cy. AC.		
1—75 kw. West.	125 v. 1200 rpm.	220/440 v.
3 ph. 60 cy.		

## DUQUESNE ELECTRIC & MANUFACTURING CO.

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- 1 9W Monighan Dragline
- 3 1201 Lima Draglines & Shovels
- 1 19 Lorain Shovel
- 1 855 P & H Shovel
- 2 D8 Caterpillar Tractors
- 2 D6 Caterpillar Tractors
- 2 Hardsoc Horizontal Drills
- 1 Buda Vertical Drill
- 13 27FDT Euclid Haulers
- 4 Half Track Trucks
- 9 Service Trucks & Pickups
- 1 10 Ton, 3 Wheel Roller
- 1 160 ft. Air Compressor

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Silicone base fuses with surface metal. For heat lines, condensers, ovens, engine heads, mufflers, radiators, exhaust manifolds... all extra hot surfaces.



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Any Size Any Track Gauge  
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 Greensburg Pennsylvania

**D.C. Generators—250 v. D.C.**

No.	KW	Make	Speed
1	250	West.	1200
1	175	G.E.	700
3 NEW	135	G.E.	1150
1	125	West.	560
1	125	Allis-Chal.	1160
1	110	West.	700
1	100	Allis-Chal.	1150
1	75	West.	750
1	40	G.E.	720

**HOISTS OR WINCHES**  
 200—1½ ton Hand Cranked ratio 27:1 thru an enclosed double reduction gear unit with 4 planetary gears mounted on steel plate complete with 48' of ¼" cable, ratchet type brake, push button release.

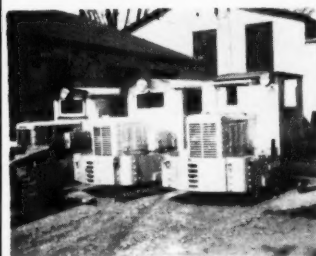
**CAR PULLERS**  
 100—Brand New with ¼" cable, 1½ and 2 ton A.C. or D.C. Motors.

**COMPRESSORS**  
 1—315 CFM Ingersoll Rand Portable, 100 lbs. pres. driven by 105 HP Waukesha Oil Engines, 860 rpm.

**BARGAIN—FOR SALE**  
 100 KW. Diesel Engine Generator Sets  
 11—100 KW., 250/275 v. D.C. Delco Generators dir. con. to 150 H.P., Model GBD-8, 8 x 7, 8 cyl. Super or Diesel Engines, electric starting with muffler, power panel and accessories.

Practically as good as new—  
 Only Used for spares.

## FOR SALE



3 — BROOKVILLE LOCOMOTIVES  
 2½ Ton, Gasoline Engine Type with fully enclosed steel cabs, 36" gauge Timken Bearing Axles.

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1 3/8" . . . 1 1/2" . . . 1 3/4"

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Phone CEdar 1-7710

• Heavy-duty fenders previously offered as an attachment for Cat D8 Tractors have now become standard equipment, it is announced by Caterpillar Tractor Co.

These stronger fenders are manufactured from one-half inch steel plate and will provide a more rigid platform for mounting equipment.

The announcement said that the heavy duty fenders will also withstand greater abuse and rough treatment sometimes encountered in pioneering and logging operations.

Effective with this change, heavy duty fenders are now standard on both D8 and D4 tractors. It is anticipated that heavy-duty fenders will also become standard equipment for D7 and D6 tractors within the near future.

• Air improver, particularly for use in a poorly ventilated lavatory, is a wall attachment with a small, quiet, electric motor blower which circulates the air through activated carbon. The device does not change the air in any way except to filter out impurities.



One of the many exhibits of the Bituminous Coal Institute, showing the advantages of heating homes with coal.

## FOR USE ON PERMISSIBLE ASSEMBLIES\*

### CONVEYOR CONTROL SWITCH

Explosion Tested and Open Types

The Schroeder Brothers Conveyor Control Switch is a simple pullcord, circuit that is quickly operated from either or both directions by a tug on the cord. It is available in Design MS (open type) and MSP (explosion tested) and has one "on" and two "off" positions . . . the second "off" position is an additional safety factor as two tugs on the pull cord are required to energize the circuit.



\*The U. S. Bureau of Mines in a letter dated 12-19-49 (file X-P-347) found the Schroeder Conveyor Control Switch to be "suitable for use on permissible assemblies."

#### • FOR BELT CONVEYORS

With a Design MS Switch, a belt conveyor is under complete control and can be stopped or started from any point along its full length. This is a decided safety advantage in emergencies and in transporting men to and from work. A rock fall over the belt will generally pull the cord bringing the conveyor to a stop, thereby holding the damage to a minimum.

#### • FOR SHAKING & CHAIN CONVEYORS

The Design MS Switch, when installed on or near the magnetic starter of a shaking or chain conveyor, provides a "start-up" control from the loading end without running an electric circuit to that point.

### AIR AND ELECTRICAL EQUIPMENT

CHICAGO PNEUMATIC TOOL CO. IRON CITY DRILL STEELS  
CLARK AND ENSIGN CONTROLS LEROI CLEVELAND ROCK DRILLS  
ELRECO LINE MATERIAL OLIVER ROOF BOLTS  
DRILL BIT AND TOOL CO., *Throwaway Bits*  
AMERICAN AIR FILTER DUST CONTROL  
U. S. ROYAL CABLES AND CORDS  
SCHROEDER BROTHERS MINE LOCOMOTIVE HEADLIGHTS  
SCHROEDER BROTHERS CONVEYOR SWITCHES

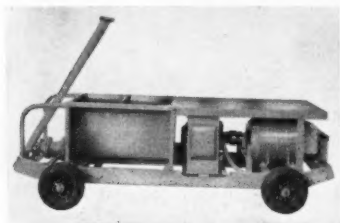
Please write for complete information on the Schroeder Brothers Conveyor Control Switch and other Air and Electrical Mining Equipment.

# SCHROEDER BROTHERS

3116 Penn. Ave. EXpress 1-1571 Pittsburgh 1, Pa.

• **THE LITTLE CHIEF** has been designed to overcome the laborious work of moving a machine from room to room for rock dusting in low-roof mines.

With the cable hooked to a crossbar, it will pull itself onto a conveyor, over a conveyor or off a conveyor.



With the rope attached to a jack it will travel on skids 45 feet a minute regardless of height of roof or condition of floor.

It has ample power to distribute a larger quantity of dust through 50 to 250 feet of 1 3/4 inch hose.

Length (with Winch) 8'-9"

Length (less Winch) 6'-6"

Height (on skids) 18"

Width 21 1/2"

Weight (with Winch) 825 lbs.

Weight (less Winch) 630 lbs.  
(with Wheels) 700 lbs.

Hopper—Capacity 2 sacks

Frame—3 1/2 x 2 1/2 x 3/4 Steel Angles—welded construction

Hopper Ends & Deck—12 Ga. Steel

Hopper Sides—14 Ga. Steel

Blower—Roots—Connersville, Delivery 78 c.f.m.

Motor—5 H. N., 1750 R.P.M. Comp. Wd., Ball Bearing

Voltages available—90, 220, 550 D. C., 220-440 A. C.

Starter—Across the line, Overload and Fuse Protection

Trailing Cable—25 ft. of 12 C Portable Cord equipped with fused trolley tap and 2 ground clamps.

Air Pressure 5 to 8 p.s.i.

Hose—5 to 250 ft. of 1 3/4" ID Dusting Hose

Dusting Capacity—26 to 60 lbs., p.m. dry Rockdust

Clutch—Blower, Multiple Disc with Overload Release

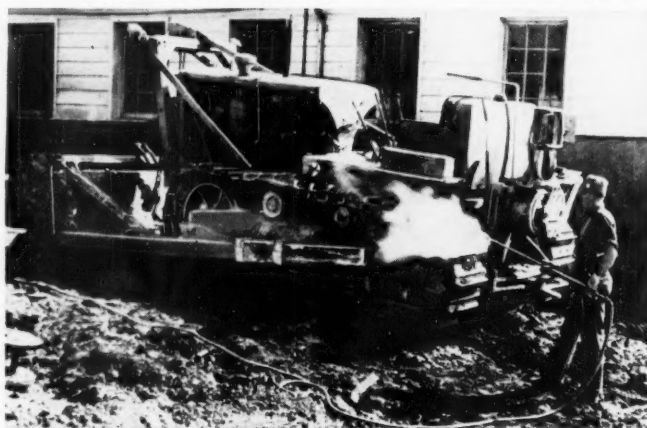
Clutch—Winch, Multiple Disc with Overload Release

Drive—Direct thru Roller Chain Type Flexible Couplings

Winch—Drum Capacity 125 ft. of 1/4 extra flex wire rope

Rope Travel—45 f.p.m. approx.

All Bearings—Anti Friction



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... Let GREEN show you the **HOMESTEAD HYPRESSURE STEAM JENNY**—an *instantaneous* steam cleaner that should be in every equipment lot! Keeps your machines operating at maximum efficiency by quickly removing dirt and grease that impair operation. Low cost — easy to operate. Check GREEN today!

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All links poured at one time from one heat of steel, insuring a chain of uniform analysis and heat treatment.

Designed for heavy service in all sizes.

### MANGANESE WEDGE BARS

For repointing Excavator and Shovel Bucket Teeth.

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Jenkins Arcade

Pittsburgh 22, Pa.

• Tungsten-Carbide Mining Machine Bits—are announced by Kennametal, Inc., Latrobe, Pa., that feature resistance to shock. The new model is designed to give longer periods of operation in cutting into roof and bottom rock, rolls, partings, binders, and to withstand the great impacts of hitting embedded rock. The insert of the bit is narrower and sets deeper into the nose of the bit than the standard Kennametal design. The new bit is available in several shank sizes to fit most machines, and is adaptable for either continuous or regular service.

• Copper-silver alloys suitable for electrical contacts where high electrical conductivity in conjunction with high strength and resistance to wear are required brought John Sykes, Enfield, England, an American patent. Tiny amounts of oxygen are used in these alloys.

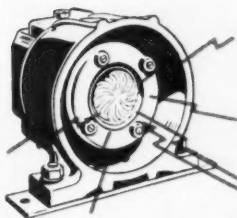
Copper-silver alloys have been long used for various purposes. This invention, with the special properties mentioned, is obtained by utilizing a silver content within a given range and including a carefully controlled small percentage of oxygen. It is from 5% to 7% silver, and less than one-tenth of one per cent. oxygen.

Patent 2,559,031 was awarded to Mr. Sykes for this invention. Rights have been assigned to Enfield Rolling Mills Limited, also of Enfield, England.

• Tungsten-carbide drill bits with hexagon shanks are available from Kennametal, Inc., Latrobe, Pa., in sizes of 2 1/4", 2 1/2", 2 3/4", and 3". They are designed for drilling holes for Armstrong, Airdox, or Cardox blasting devices. The first three sizes fit 13/16" hexagon auger sockets and are adaptable for 1" hexagonal sockets. A special feature of these bits is a web core breaker which is formed into the bit forging between the prongs. The core breaker is offset from the center to give it both pressure and impact action in breaking up materials so they can be conveyed.



A new 2 1/2" auger with a 13/16" hexagon socket is also being added to the line.

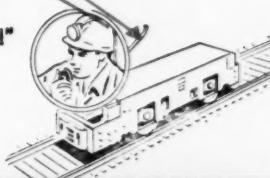


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Modern mining the Fenco way—by Trolleyphone—means constant control thru foolproof communication. It means push-button supervision—instant contact with every section of the mine, whether motormen on the move, or foremen at the face. Gives quick action, quick reports. Cuts stops, delays, accidents—and costs!

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- Ups production
- Brings savings
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- for greater profits



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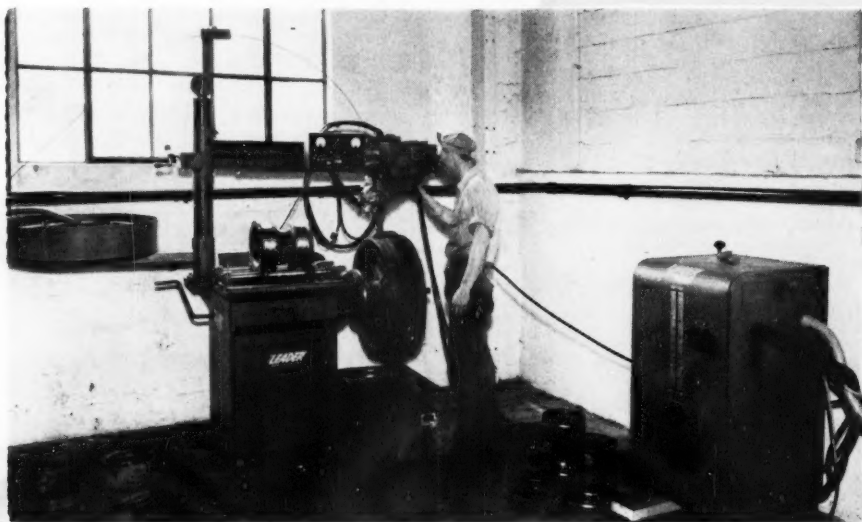
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CASUALTY COMPANY**

GREENSBURG, PA.



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THEY CAN BE REBUILT!**



Pictured is the new Leader Welder recently installed in our Frackville shop. Now we can build-up your worn idlers and rollers to their original size and toughness, saving you money and conserving scarce steel. Our roller and idler rebuilding plan will save you down-time, too, on any make of crawler tractor. Call us today.



◆ To help keep your present "Caterpillar" equipment at work, we have added new parts services. Now we can rebuild many critical worn-out parts to "like-new" condition. These parts are built-up, precision finished and fit like the originals . . . and they give a long work life. Cost is low. Our stock of factory-made parts is tops in the industry.

These parts services assure a longer life for your vital "Cat" equipment . . . insure a drop in down-time. Come in and see our parts rebuilding facilities in action . . . see what they mean to you and to your equipment. Do it today!

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# "CATERPILLAR"



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AUGUST, 1951

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## OSGOOD

**Model 1006 wins widespread preference  
because it's specially built for coal mining**



At efficiently operated coal mines like this one of McCoy Bros., Phillip, W. Va., OSGOOD Model 1006 Stripping Shovels are preferred because they are real coal shovels—specially designed for the industry. OSGOOD Air Control with the famous OSGOOD Air Cushion Clutch provides unequalled smoothness and speed in removal of overburden. Metering valves deliver exactly the right pressure for each operation. For extra stability: 20-ft. crawler with 40-in. tread width. For long reach: 45-ft. boom and 35-ft. handle. For big bites: 2 cu. yd. bucket. Kohler Light Plant for night work. Write for full information.

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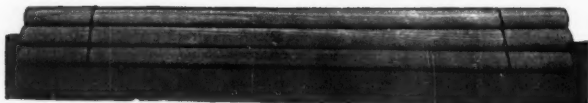
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The OSGOOD COMPANY

MARION, OHIO

AFFILIATED WITH THE GENERAL EXCAVATOR CO.

POWER SHOVELS, CRANES  
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PILE DRIVERS & BACK HOES  
CRAWLERS & MOBILE CRANES  
DIESEL, GASOLINE OR  
ELECTRIC POWERED  
CAPACITIES  $\frac{1}{4}$  TO 2 $\frac{1}{2}$  CU. YD.



### WOOD TAMPING POLES

For Tamping Explosive Shots: Poles are round made of Hardwood. Sizes to 16 ft. long.

1" Dia.	8c per lineal ft.
1 1/4" Dia.	12c per lineal ft.
1 1/2" Dia.	14c per lineal ft.
1 3/4" Dia.	16c per lineal ft.
1 7/8" Dia.	18c per lineal ft.
2" Dia.	20c per lineal ft.
2 1/4" Dia.	22c per lineal ft.
2 1/2" Dia.	24c per lineal ft.

Special diameters and lengths can be furnished. These Poles meet the requirements of the New Federal Mine Safety Code.

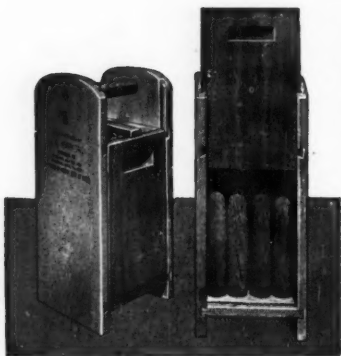


### SECTIONAL TAMPING POLES

These Poles are made of straight grained wood and are coupled together with removable wood pins held in place in recessed grooves by a rubber band and can be quickly connected and unconnected.

Couplers and Head Blocks are 4, 5, and 6 inches in diameter. Please specify size when ordering. Poles are 1 1/2 inches in diameter.

Head Blocks	4" Dia.	1.70 Ea.
Couplers	4" Dia.	3.90 Ea.
Poles 12 ft. long	1 1/2" Dia.	.60 Ea.
Poles 14 ft. long	1 1/2" Dia.	4.20 Ea.
Poles 16 ft. long	1 1/2" Dia.	4.80 Ea.
Poles 18 ft. long	1 1/2" Dia.	5.40 Ea.
Poles 20 ft. long	1 1/2" Dia.	7.00 Ea.
Poles 22 ft. long	1 1/2" Dia.	8.80 Ea.
Poles 24 ft. long	1 1/2" Dia.	9.60 Ea.



**EXPLOSIVE BOXES:** Made entirely of wood having no metal parts, tongue grooved and dovetailed construction with automatic lock using a rubber band for a spring, treated with paraffin to make moisture resistant. "Approved by the Pennsylvania Department of Mines." Sizes as listed based on 1 1/4" x 8" sticks.

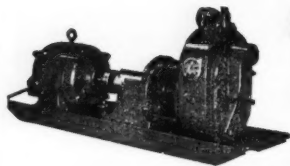
### Powder Box Prices are as follows:

No. 9 Powder Box	\$2.55 Ea.	No. 25 Powder Box	\$5.10 Ea.
No. 12 Powder Box	2.95 Ea.	No. 36 Powder Box	6.50 Ea.
No. 16 Powder Box	3.45 Ea.	No. 50 Powder Box	7.60 Ea.
No. 20 Powder Box	3.90 Ea.	No. 72 Powder Box	8.70 Ea.

### Detonator Box Prices are as follows:

No. 6 size 2 1/2" x 3" x 6" inside	\$2.15 Ea.	No. 8 size 2" x 2 1/2" x 8" inside	\$2.15 Ea.
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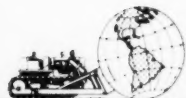
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## *Highway*

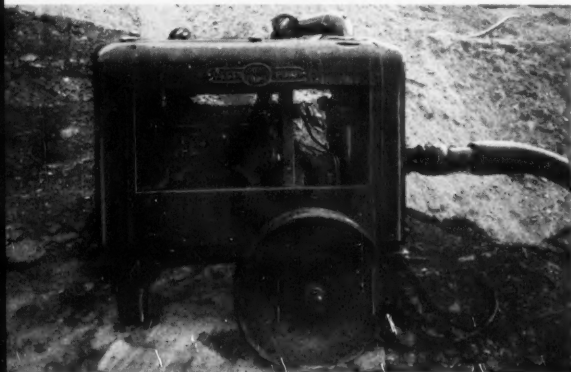
### EQUIPMENT COMPANY

6465 Hamilton Ave.

Pittsburgh, Pa.



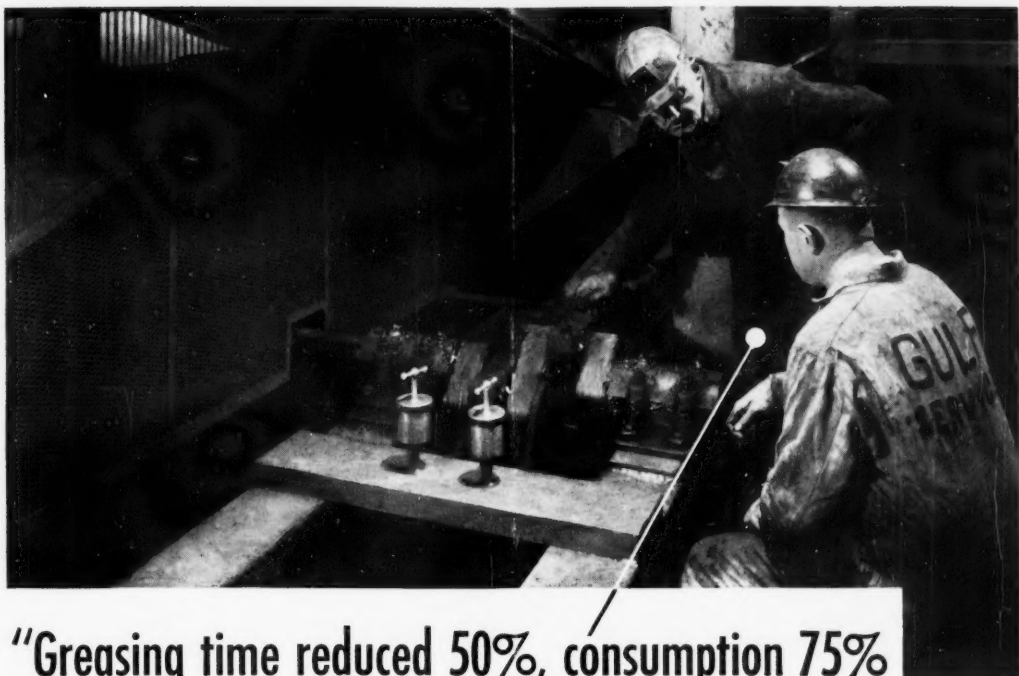
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Hansel Coal Co., Madera, dewater pits with Jaeger Pumps.



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